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ABSTRACT

Social skills development of preschool children with visual impairments is discussed. A review of the literature considers the field of child development and social cognition, the effect of blindness on child development, and the effects of blindness on social cognition. Three areas concerning the development of social skills for children with visual impairments are addressed: social interactions and development within the home; social skills in the preschool, with particular emphasis on play research; and early social skills intervention programs. It is concluded that children with visual impairments develop differently than children without visual impairments. Their passage through the various stages of development is usually delayed. The development of socialization skills may also be delayed if the early experiences of the child are not enhanced or mediated through the environment. It is important to teach parents how to interact with their child, identify their needs, and encourage interaction with siblings. Encouraging appropriate play skills is also important to the early acquisition of social skills. The child who is visually impaired must develop play skills in order to maintain interactions with peers. The direction for future research in preschool social skills development is briefly considered. (Contains 54 references). (SW)

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Running Head: PRESCHOOL SOCIAL SKILLS

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Social Skills Development for Preschool Children with Visual Impairments

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Introduction

Vision is critical to the cognitive and social development of children–it is the primary system of sensory input and is the foundation of human learning. When a child is born with a total or partial visual impairment, his overall development is affected. Information about the child's world is fragmented and often inaccurate because vision normally integrates all of the sensory input the child receives from the environment and acts as a motivator for activity and exploration of the environment.

Visual information also plays an important role in the acquisition of skills that are critical for positive social interactions. To become socially adept, children need to observe social interactions directly. When a child has a visual loss, he is unable to make such observations incidentally. Therefore, children with visual impairments need "to learn social skills that will make them more accepted by others" (Fazzi, Kirk, Pearce, Pogrund, & Wolfe, 1992, p. 56). Vision loss and the absence of visual stimuli is associated with a lower level of motivation to explore the environment, manipulate toys and other objects, initiate play with peers, and learn through imitation (Fazzi et al. 1992; Recchia, 1987; Rettig, 1994; Warren, 1994). These elements hinder early social development and social skills. Consequently, family members, teachers, and vision specialists must work together to provide experiences that foster reciprocity and active participation in the environment so that a foundation for future social interactions is created. Without such a foundation, the social benefits of mainstreaming preschool children with visual impairments will be few. Rather, they will likely suffer social isolation because they lack the social-cognitive structure that would enable them to be accepted by their peers.

Therefore, this paper will address the issue of social skills development for preschool children with visual impairments. The first section will review related literature in the field of child development and social cognition, blindness and its effect on child development, and finally, the effects of blindness on social cognition. The second section will address three specific areas on the development of social skills for children with visual impairments: (1) Social interactions and development within the home; (2) social skills in the preschool, with particular emphasis on 'play'

research; and, (3) early social skills intervention programs. In the final section, conclusions will be made and a few comments regarding the direction of future research in preschool social skills development will be discussed.

Review of Related Literature

Child Development and Social Cognition

According to Piaget (1952, 1960), cognition (the process through which knowledge is acquired) develops as children interact with surrounding objects and people. Such interactions provide a child with the experiences necessary, in combination with biological maturation, to help him/her progress through the various stages of development.

Social cognition refers to "the individual's understanding of social relationships and the roles of self and others in the social context" (Warren, 1994, p. 272). The development of social cognition depends, in part, upon a child's thinking and knowledge concerning human beings and the things they do. For example, role-playing with peers encourages the moral development of children and enhances social integration (Warren, 1994).

Children's development in general can be described as following a progression. Children tend to reach the same developmental milestones at about the same time (Piaget, 1952, 1960). Piaget's theory involves four stages of development through which all children pass at a fairly similar rate. It must be noted that, although Piaget's theory is a stage model, the stages are not mutually exclusive. There is overlap from one stage to another in that behaviors that are exhibited in Stage 2, for example, may also be seen, less consistently and less accurately, in Stage 1.

The first stage, the sensori-motor period, lasts from birth to approximately two years of age. The ability to gaze at a light source or an object is typically stable by six months of age, and eye-hand coordination (visual searching and fine motor coordination) at about twelve months (Gesell, 1949). At 12 months, visual-form perception has also developed to the point where a child is able to relate what he sees (in image or picture form) to the world around him. By

approximately 18 months of age, the ability to understand that an object still exists after it has been removed from the child's visual field (object permanence) is fully developed.

Most of what a child experiences at this point is dependent upon vision. Vision as a learned process helps the child understand what he sees and develop the ability to react to what he sees: vision integrates all of the sensory information for the child. For example, the sight and sound of an object motivate a child with sight to reach for and grasp it at four months of age. At about six months, the child will turn in the direction of the sound of his mother's voice, recognize her, smile and/or extend his arms to indicate he wants to be picked up and interact with his mother while being held. All the while, he is looking at his mother's face, reaching and touching various parts of it and being reinforced with smiles, strokes and gentle words by his mother.

The second stage, the pre-operational stage, generally extends from about two years of age to about six years of age. Usually, children three to five years of age are considered to be "preschool"; however, the minimum and maximum ages may vary depending on the community or country. Consequently, this stage of development is of particular import, as this paper focuses on social skills at the preschool age.

During this period, a child develops the 'symbolic function' that allows him to represent reality through another medium. The thought processes characteristic of children in the preoperational stage dictate that they are unable to understand that their perspective and that of another are not identical (egocentrism) although, the decline in egocentric thought typically begins at approximately four years of age. Additionally, children at this stage are incapable of engaging in logical operations that require the processes of reversing, decentering, conserving, and conceptually organizing material.

The preoperational period is further divided into two significant growth periods. From 2 to 4 years of age, the child's development is marked by egocentric use of language and reliance upon perception in problem solving. Some of the child's speech constitutes social communication (e.g., telling his mother he wants something to drink), while the majority of his speech is egocentric in nature. That is, the child spends a great deal of time talking to himself, even while playing with

peers. By four years of age, the visual system of the child has also fully developed. Like the general development of the child, vision, too, follows a developmental sequence. Ferrell (1985) outlines nine levels of visual development that should be kept in mind when creating an environment that will enhance the visual skills of a child. The ordering of items indicates the order of development within that particular level as follows:

1. Awareness of, attention to, and understanding of stimuli.
2. Attention to light, to people, and to objects.
3. Fixation on, and tracking of moving objects or light.
4. Interest in near objects, interest in distant objects.
5. Peripheral vision, and central vision.
6. Preference for familiar stimuli, and for novel stimuli.
7. Looking at part of an object, and looking at the whole object.
8. Interest in simple items, in complex items, and in designs.
9. Interest in large items, and in small items.

These levels of vision development play a large role in the acquisition of various skills by a child at a certain stage of his development. For example, if a child is unable to perceive part of an object visually, he will not be able to perceive the whole object. Since so much of a child's early learning–and consequently, social development–is dependent upon vision, it is imperative that the order in which a child is presented with visual stimuli be adhered to when attempting to enhance the child's visual environment.

The second growth period in the preoperational period, from 5 to 7 years of age, is characterized by the child's development of more communicative or social speech and greater emphasis on intuitive thinking rather than perception alone. Speech has become a tool for communicating with others. By the end of the preoperational period, a child becomes less self-centered and is typically able to think of himself as an independent social person.

Most prominent at the preoperational stage, is the role of play. Play helps a child develop a plethora of skills: cognitive, social, emotional, linguistic, physical, and motor (Garvey, 1977;

Piaget, 1952; Vygotsky, 1986). It is a form of social interaction in which children learn about themselves and the world around them. Consequently, the majority of research and early intervention programs focus on the social cognition of preschool children through play. Rettig (1994) identifies six types of play that preschool children engage in that will be referred to throughout this paper:

1. *Solitary play*: When a child plays alone, shows little awareness of another child in the play area, and does not interact with the child.
2. *Parallel play*: When a child plays near but not with another child and plays either with similar or different play-things.
3. *Functional-manipulative play*: When a child manipulates a plaything or uses it in the way it is intended to be used (for example, pretending to drink from a toy cup).
4. *Symbolic play*: When two children are pretending that an object is another object (such as making believe that a stick is a gun).
5. *Dramatic play*: When a child is engaged in a pretend role-play activity (for instance, pretending to be a mother or Batman).
6. *Cooperative play:* When children are engaged in play that is organized and there is give and take among the children (p. 411).

Stage three, the concrete operational stage, begins at approximately seven years of age and lasts until about eleven years of age. Children at this stage acquire and use cognitive operations (mental activities that are components of logical thought), and understand the basic properties of and relations among objects and events in the world. That is, a child is now able to understand that properties such as mass, weight, and then volume remain constant regardless of how they may appear when transferred from one container to another. Piaget refers to this ability as "conservation". Children are also becoming more proficient at inferring motives by observing others' behavior and understanding that their point of view is not necessarily that of others.

Stage four, characterized by formal operations, begins at about eleven years of age and continues through adulthood. Abstract thought and systematic, deductive reasoning develop

increasingly, and logical thinking is no longer limited to the concrete or the observable. Children are now capable of considering many possible solutions to a problem and choosing the correct answer.

Piaget's stage theory continues to provide the philosophical foundation for current researchers, especially those investigating exceptional children. Comparative studies often refer back to the "norm" as described above in order to show differences between them and the group being studied. In the field of visual impairments, Piagetian developmental referents are applied by many (Bigelow, 1992; Farrenkopf & Davidson, 1992; Ferrell, 1985; Hatwell, 1985; Warren, 1984, 1994). Fraiberg (1977), following a more psychoanalytic theoretical frame of reference, seems to be one of the few exceptions to this preference.

Blindness and Child Development

Visual experience is critical in the cognitive and social-cognitive development of children and is the basis for the majority of our learning. (Adelson & Fraiberg, 1974; Bigelow, 1992; Finello, Hedlund-Hanson & Kekelis, 1992; Lairy & Harrsion-Covello, 1973; Landau, 1987; Piaget, 1960; Warren, 1984, 1994). Children who are totally blind or who have low vision, therefore, cannot be expected to progress through the various stages of development in the same way as children with normal vision. This is not to say that they do not develop beyond Piaget's stage of concrete operations; rather, their development is impeded somewhat by the lack of visual input. Consequently, the child who is blind must use his remaining sense organs to acquire piece-meal information in order to learn about his environment.

Piaget (1952) considers exploration of the environment to be the foundation of knowledge. Since children who are blind cannot explore the environment the same way as children with sight, the knowledge they acquire through tactile exploration of the environment must be organized differently (Fraiberg, 1977). The act of reaching for an object becomes much more complicated for a child who is blind because he cannot experience the visual stimuli that typically attract a child with sight. Therefore, the reach response for a child who is blind requires both the ability to distinguish between auditory and other stimuli and the ability to coordinate audition and reaching.

Consequently, reaching is delayed by approximately seven months, as the child who is blind must learn to associate sounds with existing objects in the external world (Finello et al., 1992; Fraiberg, 1977).

Although Piaget has written very little on the development of children who are blind, research based on his general writings suggests that the cognitive functioning of children who are congenitally blind and visually impaired develops more slowly than that of children with sight (Brambring & Tröster, 1994; Pogrund, Fazzi, & Lampert, 1992; Warren, 1984, 1994). Although children who are blind experience delays in the earlier stages of development, some researchers believe they eventually "catch up" (Hatwell, 1985) and some suggest that they have a unique sequence of development (Davidson & Nesker-Simmons, 1984; Farrenkopf & Davidson, 1992; Warren, 1984, 1994). That is, children who are blind reach certain developmental milestones at a rate that is different from, and usually slower than, that of children with sight.

Warren (1984) states that in order to overcome some of the "lags" in development that the child who is blind experiences, it is important to accelerate and/or encourage the acquisition of developmental milestones because otherwise, they may not develop at all. A "critical period"–a specific time during development when certain experiences will have an effect, and after which the effect can no longer be obtained through exposure to the experience–may be missed if the skill is not encouraged.

Blindness and Social Cognition

The major impact of blindness on social cognition is such that all learning must take place through the other senses; children who are blind are at a disadvantage when testing and confirming inferences about others and the environment in general. That is, a child who is blind is unable to see an angry or happy expression on another person's face. He must infer the emotions of another by touch or sound, senses which may not necessarily provide accurate information about another's emotion (Bigelow, 1992).

During social exchanges, children with visual impairments are often unable to maintain eye gaze, respond to gestures and contextual cues appropriately, invite responses from peers, initiate

interactions and maintain those interactions (Kekelis, 1992; Parsons, 1986; Recchia, 1987; Rettig, 1994; Rowland, 1984). Similarly, the visual experience that enables a child with sight to learn about his body parts and the similarity of his body and body parts to those of other children is not available to a child who is blind. Self-centeredness and self-other confusion are often associated with children who are blind and thought to be largely the result of the limited social understanding of this group (Warren, 1984, 1994). Inevitably, many children who are visually impaired are met with rejection and isolation from their peers, resulting in, among other things, low self-esteem (Kekelis, 1992; Tuttle, 1984).

Social Skills Development

Development within the Home

The development of a child's social behavior is the result of his social environment and the interactions it provides. The home environment is the first and most significant social environment that the child is exposed to. For a child who is visually impaired, the home environment is even more significant to the child's socialization (Cohen, Harrell, Macon, Moedjone, Orrante, Pogrund, & Sacks-Salcedo, 1992; Ferrell, 1985). It is within the home environment that the young child who is visually impaired first learns the importance of social interactions. Communication between the primary care-giver (hereafter assumed to be the mother) and the infant is critical. However, establishing social interaction between a mother and an infant who is blind is not an easy task.

As stated earlier, much of the infant's development during the first two years of life are vision-dependent. It has been suggested that blindness affects the communication between mother and infant and often, leads to parental rejection and reduced interactions (Jan, Freeman, & Scott, 1977). Jan, Freeman and Scott state that parents must be alert to non-verbal signs of communication that indicate an awareness and enjoyment of social and verbal interaction: parents must communicate with their child.

One of the earliest and most significant studies of the social relationship between children who were blind and their mothers was conducted by Imamura (1965). In a comparative study,

Imamura examined the every-day interactions between the mother and her child who was blind. Ten children ranging in age from 3 to 6 years were observed interacting with their mothers over several trials for a period of five minutes each. Results indicated that the children: (a) were less likely to initiate social contact with their mothers; (b) initiated interaction that was "help-seeking" in nature; (c) were accepting of a dominant mother; (d) were more aggressive when responding to their mothers' aggressive behavior; and, (e) were more sociable and less dominant in their responses to their mothers' compliant behavior. Clearly, Imamura's study illustrated that "social behavior does not occur in a vacuum" (Warren, 1994, p. 252).

Lairy and Harrison-Covello (1973) conducted a similar study in France that looked at the relationship between environmental factors and the general development of children who were blind. Specifically, they were interested in the parents' reactions to and attitudes regarding their children's visual disabilities and the quality of their relationships with their children. Approximately 50 children under the age of six and with varying degrees of visual impairment (total blindness to legal blindness) were examined, interviewed and observed over an eight year period. A variety of developmental scales were used to create four groups characterized by certain qualities. Group I was characterized as being "relatively normal" (p. 9). Family environments in this group show that after a short period of depression, the child was accepted. Approximately half of the children were totally blind, leaving the authors to speculate that the other half used their vision to facilitate their early development. Parents of children in Group I also appeared to have accepted their child's visual disability to the point that their expectations for schooling did not appear to be negatively affected. Many of the parents had more children after the birth of the child with the visual impairment, thereby indicating a positive familial attitude.

Group II was characterized by normal postural abilities and speech, but lower in the areas of autonomy, sensorimotor and sociability skills. These children also displayed extreme passivity thought to be the result of the over-protective attitude of the mother. However, mothers' attitudes changed through educational advice. Developmental delays were also noted, despite the "verbal richness" they displayed in social interactions with their mothers (p. 10). Group III was

characterized by normal postural development and autonomy, while extreme delays were noted in sociability, language and sensorimotor skills. The authors stated that not only were developmental delays evident, but, evidence of pathological behavior also existed, they speculated, as a result of the parents' inability to accept their child's visual loss. Echolalic speech and inappropriate use of speech indicated that these children did not use speech to communicate needs or initiate social interaction (Lairy & Harrison-Covello, 1973).

Group IV was characterized as having a low overall level of development, perhaps indicating that some of the children had multiple disabilities. The researchers stated that these children would not have benefited from any changes to their social environments and that they were more than just developmentally delayed–they were "neurological", or brain damaged (p. 13).

Lairy and Harrison-Covello's (1973) work was exceptional in that it showed how the child's home environment was linked to development and social-emotional factors. Additionally, the importance of the mother's attitude and acceptance of her child's visual loss to the development of social cognition was emphasized: "The absence of sight makes the child's upbringing genuinely difficult; it demands much greater virtues in the mother than those required for bringing up a sighted child" (p. 15).

The emphasis Lairy and Harrison-Covello (1973) placed on the mother's role in the social development of her child, at first glance, seemed to be unreasonable. However, given the paucity of research in this area before them, that child rearing practices were different at the time of their study, and the fact that their theoretical framework was that of psychoanalytic theory, the importance placed on the maternal figure was understandable. It has become more widely acknowledged that the role of the primary caregiver is important; however, it has been combined with other environmental factors that may be equally important. For example, Bradley and Caldwell (1984) cite three environmental variables for the positive development of children in general: (1) Provision of sufficient and appropriate play materials; (2) affectionate, non-restrictive, and non-punitive caregiving; and, (3) verbal stimulation of and responsivity to the child.

In a more recent study, Dote-Kwan and Hughes (1994) explored the relationship between early home environment and development, the relationship between socioeconomic status (SES) and development, and the validity and reliability of the extended HOME (Home Observation Measure of the Environment) Inventory. The extended HOME Inventory is currently used as the primary measure of family-environments in programs for children with visual impairments (Rock, Head, Bradley, Whiteside & Brisby, 1994). The quality of the home environment, interactions, and events associated with the child's development were assessed by the extended HOME Inventory.

Eighteen children who were legally blind (10 boys and 8 girls) aged 20 - 36 months were observed interacting with their mothers in their homes. All of the mother-child dyads were from similar Anglo backgrounds, but SES was not controlled for. Various developmental indices were used to determine the child's developmental level and the extended HOME was used to assess the home environment. Interviews and observations were made during one visit to the home (lasting approximately 2 1/2 hours) by two individuals. Interrater agreement was established at 95.69%.

Dote-Kwan and Hughes (1994) discovered that the HOME scale was not an accurate predictor of developmental indicators for the entire group of children in the sample. However, when the sample was divided into two groups of children with no vision and children with some vision, there was a greater degree of predictability. Unfortunately, the authors could not cite any usefulness in this quality.

Of importance were the findings related to the mother-child scale. Since the scale was based on observations of the mothers and their children while completing their day-to-day tasks, it was expected to yield interesting results. Interactions that promoted clarification of a task by the mother, requesting assistance and encouraging communication were positively related to the developmental indices on the extended HOME. However, mobility-related tasks and describing new events were negative predictors of development. As Warren (1994) pointed out, these ran contrary to the findings of Imamura (1965).

In addition, they found that SES was not related to the development of a child who was blind or to the quality of the home environment. The HOME Inventory and its measurement of the overall home environment was not significantly related to any developmental scores, although it has proved to be a valid tool for use with children who are not visually impaired.

Another study examined the Infant-Toddler (IT) and the Early-Childhood (EC) forms of the HOME Inventory over a three year period (Rock et al., 1994). Rock et al. (1994) tried to ascertain whether the inclusion of items and scoring criteria specific to the developmental needs of children with visual impairments on the HOME Inventory would result in more useful information. The IT-HOME was for use with infants and toddlers from birth to three years of age, and the EC-HOME was for use with children in early childhood (3 - 6 years of age). A middle childhood (MC) form also exists for children 6 - 10 years of age, but it was not used for the purposes of this study.

The sample included 31 children, six months to six years of age, from Arkansas area schools, services and agencies in 1985 and 1986. Eleven children were assessed using the IT-HOME and 20 children using the EC-HOME Inventory during two home visits conducted approximately 18 months apart. A Social Support questionnaire was also developed by the researchers to assess the instrumental and social-emotional support available to the parents.

Despite the limitations the small sample size imposed on the results of the research, it was ascertained that the families of children with visual impairments scored about the same on the EC- and IT-HOME Inventories as did the families in the norm group (Rock et al., 1994). For preschoolers, the amount of activity in groups, the number of people in their social network and perceived helpfulness of support were most strongly correlated with the EC-HOME norms. The IT-HOME had only a few statistically significant results: the 'Acceptance of Child' subscale and children's competence were negatively correlated. The authors speculated that parents of more capable infants with visual impairments were more likely to restrict them and, that this pattern was also evident but not statistically significant, for the early childhood subjects. Interestingly though, more capable preschool-aged children with visual impairments received higher levels of language and academic stimulation and greater variety of stimulation in general.

It must be noted that because of the limited sample size, the study could not establish the validity of the IT- and EC-HOME Inventories for use with families of children with visual impairments. However, rather than using them for assessment purposes, the authors suggested that they be used in the selection of early intervention programs. The authors concluded that the IT-HOME and the EC-HOME tapped "dimensions of the home environment that are likely to benefit children with visual impairments" (Rock et al., 1994, p. 150).

It is obvious then, that the home environment plays a significant role in the development of early social skills in young children with and without visual impairments. Interaction with family members and, in particular, the primary caregiver lay the groundwork for future social interactions with others. Parental attitudes and acceptance of a child's visual disability influence the type of interaction the parents and children will have. As Warren (1994) states, "families that adjust well to the child's visual impairment tend to provide a setting in which the child's social development can thrive" and that "maladaptive family dynamics make the child's socialization exceedingly difficult" (p. 260).

Development within the Preschool

When a child enters preschool, the influence of family and primary caregivers decreases while the peer group and others increasingly become the main influence on the child's social development (Warren, 1994). The demands of the preschool environment are significantly different from those the child experienced within the home. As a result, the adjustment to preschool can be a difficult one, especially for children with visual impairments. The social benefits of mainstreaming children who are visually impaired in preschools are not immediately obvious, nor are they automatic. Simply placing young children with visual impairments in the physical proximity to their nondisabled peers without any structured training in social skills can result in social isolation and rejection by their peers (Bishop, 1986; Erwin, 1993; Sacks & Reardon, 1989). One must, therefore, examine closely the vision-related variables on the development of social skills within the preschool environment.

Fazzi et al. (1992) state that social skills are learned incidentally by most children, but must be systematically taught to children with visual impairments (p. 55). Things such as teaching children with visual impairments to keep their hands to themselves, hold their head up and look in the direction of the speaker, and asking another child to play with them will help them become more socially accepted by their peers. Often, children who are visually impaired will engage in socially inappropriate behavior that discourages other children from interacting with the child who is visually impaired. Such behaviors are referred to as "stereotypic behaviors", "blindisms" or "mannerisms".

Mannerisms are behaviors that are repetitive, usually involving such things as eye rubbing, heading turning, hand gestures, finger flicking, and body rocking or swaying (Estevis & Koenig, 1994; Warren, 1994). Mannerisms are of particular concern to parents and early educators as they have the potential to inhibit normal social interactions. For example, Fazzi et al. (1992) state that when a child engages in stereotypic behaviors, peers attempting to interact with the child who is blind tend to interpret those behaviors as demonstrating lack of interest and enthusiasm. As a result, the peer loses interest in playing with the child because he was perceived as being different or unusual (p. 60).

In an attempt to ascertain the stability and frequency of certain mannerisms of children between the ages of 5 and 72 months, Brambring and Tröster (1992) distributed two questionnaires to parents of children in Germany who were totally blind from birth. Eighty-five subjects, 47 boys and 38 girls, responded to the first questionnaire, while only 52 responded to the second questionnaire approximately one year later. The latter group was divided into two age groups: the first group consisted of 24 children (15 boys and 9 girls) who were 7 to 24 months old, and the second group was comprised of 28 children (15 boys and 13 girls) who were 25 to 56 months old.

Given that parents were considered a reliable source of longitudinal information regarding the mannerisms of their children, the authors had parents fill out the Bielefeld Parents' Questionnaire for Blind and Sighted Infants and Preschoolers (Brambring & Tröster, 1992).

Results after the second questionnaire indicated that the dominant and most frequent mannerisms displayed by the older children in the second group were eye poking and body rocking. In the first group, the younger children displayed a broader repertoire of stereotyped behavior. Eye poking was the most dominant in the first group and almost all of the behaviors listed on the questionnaire were observed by the parent at the time of the first questionnaire.

Eye poking and body rocking remained stable and dominant for both groups from the time of the first questionnaire to the time of the second questionnaire. Repetitive rubbing and wiping movements, sniffing, making faces and repetitive manipulation of objects disappeared from the repertoire of almost all of the subjects by the second questionnaire.

Brambring and Tröster (1992) concluded that stereotypic behaviors displayed by young children with visual impairments could be divided into two groups: those that are frequent and last a long time, and those that are infrequent and disappear quickly. Additionally, the stability of stereotypic behaviors seems to depend on the age of the child. Older children displayed more stable behaviors than those behaviors that were first observed in the younger children. Stability of the behavior was also predicted by the frequency of the stereotypic behavior. That is, behaviors that occurred "almost hourly" as indicated by the first questionnaire continued to be displayed at the time of the second questionnaire.

The authors go on to describe seven typical situations in which the stereotypic behaviors occurred. Boredom, delight, being read to, excitation, and anger were stable situations with a high probability of eliciting the same stereotyped behavior displayed at the time of the first to the second questionnaire. Alternatively, the last two situations, request and being left alone, were seen as unstable. Further, the authors speculated that the children in the second group learned to respond more appropriately and to cope better with situations in which they experienced delight and excitation.

Nevertheless, Brambring and Tröster (1992) provided outstanding evidence of the frequency and stability of stereotypical behavior as displayed by young children with visual impairments. The implications of this research are such that the emergence of a mannerism at an

early age, if displayed frequently, will likely become a stable behavior in the child's repertoire within a short period of time. The possibility that the child will be cut off from his social environment, be thought of as odd, or be regarded as mentally retarded will likely occur. Stereotypic behaviors have the ability to restrict opportunities for learning, experiencing and interacting with the environment.

Many experts agree that play "is a primary avenue for children to learn about themselves and the world around them" (Fazzi et al., 1992, p. 56). Play is also the primary avenue for assessing young children's sensorimotor, cognitive and social-emotional development (Tröster & Brambring, 1994). However, the lack of vision results in many differences in the play behavior of children who are visually impaired and children who are not visually impaired. For example, young children with visual impairments tend to lag in their development of play because they explore their surroundings and objects therein less often (Fraiberg, 1977; Morris, 1974; O'Donnell & Livingston, 1991; Olson, 1981, 1983; Recchia, 1987). Engagement in repetitive and stereotyped solitary play (Parsons, 1986; Tait, 1972; Warren, 1994) and less spontaneous play (Fazzi et al., 1992; Meyers & Lansky, n.d.; Recchia, 1987) are also characteristic of young children with visual impairments. Further, they do not play with stuffed animals or dolls, rarely engage in animism (Gerhardt, 1982; Warren, 1984), play less frequently with their peers who have sight and prefer to play with adults (Pogrund et al., 1992; Rettig, 1994; Schneekloth, 1989; Skellenger & Hill, 1994).

Even when children with varying levels of visual impairment are compared, differences in their play activities are evident. Schneekloth's (1989) research found that the children in his study who were totally blind spent 56% of their time playing alone, the children with partial sight spent 33% of the time playing alone and the children with sight spent only 14% of the their time playing alone. The children with sighted spent most of their time interacting with other children, while the children with visual impairments spent 1/3 of their time interacting with adults. Evidence provided by other researchers supports these claims (see Erwin, 1993; Rogow, 1981; Tröster & Brambring, 1994).

In addition to the above characteristics, delays in the development of symbolic play and dramatic play have also been documented (Bigelow, 1992; Fraiberg, 1977). However, the majority of these findings have been based on case studies, thereby prompting Tröster and Brambring (1994) to investigate the influence of vision loss on play by surveying 73 parents in Germany about their child's play behavior. A total of 41 boys and 32 girls aged 4 to 72 months who had no usable vision were matched by age and gender with 73 children with no visual impairments.

Questions on the survey referred to children's current level of play, their preferred toys, household activities, and natural objects, and their preferred types of play activities. For the 'level of play' questions, parents were asked to choose one of five levels of play that was most representative of their child's current level of play. The five levels were: (1) body-related (kicking feet, sucking thumb); (2) undifferentiated object manipulations (rattle shaking); (3) relational object manipulations (covering and uncovering an object); (4) functional object manipulation (rolling a ball); and, (5) symbolic play or role play (playing mommy). For the 'preferred toys' open-ended questions, parents wrote in their responses, elaborating where necessary. Finally, for the 'preferred types of play' open-ended questions, parents wrote in their child's favorite activities.

Several significant findings emerged from the Tröster and Brambring (1994) study. Significant differences between the children with sight and the children who were blind were evident on all levels of play. Age differences between the two groups widened as the levels of play increased. Significant differences were found on play with siblings and other children: only 39% of the parents of children with visual impairments reported that their children played with other children or their siblings, as compared to 78% of the parents whose children were not blind. Children who were blind tended to explore objects more frequently, chose noise-making objects, household objects, natural objects (rocks) and musical instruments as play items, while the children with vision played more frequently with symbolic and construction toys, picture-touch books and painting.

While playing with peers or siblings, the child who was blind tended to listen to tapes or touch books more than did children who could see. The latter group, on the other hand, tended to engage in more complex forms of play. Finally, older children who were blind tended to cuddle with their parents, sing, engage in preschool play together, and make more noise when interacting together.

Based on these findings and their sampling tool, Tröster and Brambring (1994) considered their research to be representative of all children with congenital blindness and no additional disabilities. Consequently, they made the following statements about the type and variability of preferred toys and activities of children who were blind and children who were sighted: (1) Children who were blind displayed expected blindness-specific constraints on the use of play materials (e.g., preference of objects that make sounds or feel good); (2) fewer children who were blind engaged in interactive play with other children, even though they may have had siblings or gone to a preschool and were used to being around others; and (3) children who were blind engaged in more complex forms of functional and symbolic play much later than children with sight.

Although Tröster and Brambring (1994) found many interesting differences in the play behaviors of children who were visually impaired and children with no visual impairments, they could not explain whether they indicated differences in development or differences in the way the two groups of children play with normal play materials (p. 430). If future research discovered the latter to be true, blindness-specific play interventions could provide a framework within which play skills could be enhanced.

In his review of the literature, Rettig (1994) found that deficits in symbolic play displayed by young children with visual impairments were related to language deficits as well as to lags in motor and cognitive development (p. 410). Exploration of objects was considered an important skill and precursor to play, consequently, further emphasizing the point that manipulation of toys and other objects was essential (Skellenger & Hill, 1994). He also pointed out that intervention strategies should center around the child's sense of self. Fraiberg (1977) described the delay in the

acquisition of "I" as a pronoun as being related to delays in symbolic representation. That is, she felt that the sense of self related to the development of symbolic play. Rogers and Puchalski (1984) later confirmed this statement by finding that the use of the word "no" was indicative of the child's sense of autonomy–negativism was cited as being part of a child's social and emotional development and indicated that the child knew he was separate from others. Children who engaged in symbolic play were more likely to use the word "no" than were children displaying lower levels of play.

The delay in the development of symbolic play by young children with visual impairments can be said to be the result of their lack of experiences related to lack of motivation, over-protection by the parent, and limited exploration of objects within and access to the environment (Erin, 1986; Lowenfeld, 1971; Parsons, 1986; Recchia, 1987; Rettig, 1994; Schneekloth, 1989). Recchia's (1987) research on learning to play outlines several pertinent findings. To begin with, she stressed that children with sight and children who are visually impaired have different play styles. Young children with visual impairments tend to play with only a few toys that are familiar to them. They need to be shown a new toy in a way that makes sense to them (e.g., talking about the toy while exploring the object hand-over-hand).

Secondly, and perhaps most importantly, Recchia (1987) points out that making transitions from one activity to another is more difficult for a child who is visually impaired (p. 4). Often, they do not understand why they have to stop playing and go on to something else. Children without vision do not have the advantage of seeing the cues that help prepare the child with sight for the transition. Holding the child's coat in one's hand, looking for the keys to one's car, and the hurried look on one's face are visual cues that indicate that a change is about to occur. Consequently, Recchia suggests that the child with the visual impairment hold on to a transitional item that might be associated with the place the child is about to go. For example, giving the child a ball and telling him that he can play with it at recess provides tactile and aural cues that indicate that it is almost time for recess.

Finally, Recchia (1987) makes several observations about how children with visual impairments play with other children. Many of the parents in Recchia's study indicated that their children tended to "shy away from groups of children, or behave in ways that made other children shy away from them" (p. 8). Some of the suggestions Recchia made include: providing extra time for the child who is visually impaired to familiarize himself with the other child's style of playing, allowing extra time for the child to anticipate the movements of the other child, facilitating initial interactions through an adult, and providing opportunities for play with one or two children before moving to larger groups. These strategies should assist the child with the often quick, unpredictable nature of playing with other children. If a child who is visually impaired has had successful experiences playing with other children, he will be motivated to do it again.

Play is an important component of learning for all children. Children with visual impairments are able to enjoy social interactions with their peers if they are given opportunities to engage in a variety of supported activities at an early age. The lack of visual input reduces the potential for cognitive and social learning, which are reflected in delays in play behavior.

Early Intervention

The skills of engaging in and initiating appropriate peer relationships are difficult for a young child with a visual impairment to acquire. Olson (1981) studied the exploratory behavior of preschoolers who were visually impaired and concluded that early intervention would help these children develop comparable skills to children who were not visually impaired. Schneekloth (1989) added to this by stating that there were insufficient opportunities for gross motor interactions within appropriate play environments and that some form of intervention was essential if active exploration of the environment was a desired outcome.

Skellenger and Hill (1994) based their research on the premise that vision is a primary channel for providing motivation, direction and maintenance of behaviors. The observation of other children enjoying playing motivates other children to play and prolongs the interaction. Systematic incorporation of play behavior in young children with visual impairments and teacher involvement in their play activities are the basis of Skellenger and Hill's play intervention strategy.

Three children (two boys and one girl) who were totally blind (one child had light perception in one eye) and between five and seven years of age were studied over a period of five months. The procedure included four different phases during which time a 10-second-interval recording system was used to collect data. Each play session was videotaped and analyzed by two individuals so as to maintain interobserver agreement. Approximately five days before the baseline phase began, the researchers conducted a play-setting familiarization period called the "prebaseline". The prebaseline period gave the children the opportunity to explore and orient themselves to the environment (testing room) and the toys therein. Next, a "baseline" phase was established, during which time the child played independently. Each 10-minute free-play session was videotaped.

The third phase, "intervention", consisted of the shared teacher-child intervention strategy. During this time, the investigator (acting as the teacher part of the dyad) attempted to follow the child's lead during play and to behave in a way that was similar to a playmate. If the child did not engage in any targeted play behavior for 20 seconds, the investigator either made a general comment, gave a specific play suggestion, or used hand-over-hand modeling. Five minutes of shared play activities were followed by five minutes of independent spontaneous play. Finally, a maintenance period was introduced once the level of targeted play had stabilized during the intervention phase. During this time, the child engaged in solitary play for the entire 10-minute play period.

Results showed that all three subjects demonstrated increases in shared play during the first five minutes between the baseline and intervention phases. Shared play then decreased between the intervention and maintenance phase once the support provided by the person with whom the child was playing was removed. Positive increases occurred in the children's spontaneous play over the baseline phase, but the increments were not as high as those exhibited in the shared play.

Targeted play categories (gross motor, functional, pretend talk, and pretending behaviors) resulted in some interesting differences between the three children. Child A displayed all categories of targeted play during the baseline phase, but engaged in extremely higher rates of

pretend talk. During the intervention phase for Child A, the level of pretend talk was replaced by pretend play behaviors; functional play behaviors were also observed. Child B primarily engaged in functional play behaviors, especially during the baseline and maintenance phases. Pretend play and pretend talk were observed, albeit at low levels, during the intervention phase in the shared-play and spontaneous-play sessions. On the other hand, Child C engaged in considerably more pretend talk and pretend play in the shared-play and spontaneous-play sessions during the intervention phase. Interestingly, Child C displayed low levels of targeted play during the baseline phase, engaging exclusively in functional play behaviors.

Based on these observations, Skellenger and Hill (1994) concluded that they had empirical evidence that the shared teacher-child play intervention was a successful method of increasing the play skills of children who are blind, especially if poor play skills exist prior to the intervention. However, the reader must be cautioned that the intervention strategy was conducted in a separate room without peers. If peers were introduced to the play situation, the interaction might have been be significantly different (see Recchia, 1987). Additionally, long term effects of this strategy are not possible given the length of the study and its recently published results. Although many positive gains occurred in the play behaviors of these children, they may return to their original style of play. Nonetheless, the implications of Skellenger and Hill's research suggest that the intervention strategy may be used with the parents of children with visual impairments as a method of increasing their children's social skills.

One program that has enjoyed longitudinal success in the early intervention of children with visual impairments is BEGIN (Babies' Early Growth Intervention Network) in Atlanta, Georgia (Groff & Berman, 1992). Over 135 children with visual impairments have taken part in the program since 1985. BEGIN's goals are: to improve the capacity of families to meet the special needs of their children who are visually impaired and to encourage the development of these children in supportive, normalized settings (p. 203). Four types of programs have been designed for infants and toddlers: (1) The Home Program; (2) the BEGIN-Out Preschool Transition Program; (3) the Agency Support Program; and, (4) the Consultation Support Program. In the

first program, the teacher works with the child, the child's parent(s) and siblings in their own home. Toys and other interactive strategies are used with the family in an effort to engage the young child in appropriate activities.

The BEGIN-OUT program changes the focus from the family to the teacher and the child. Most of the learning occurs in the playroom wherein children learn social play behaviors. As the child becomes more comfortable with the activities and surroundings, another young child with a visual impairment is introduced to the situation to enhance play skills with others. The relevance of intentional introduction of other children to the play situation as part of the intervention has already been cited by Schneekloth (1989), since his findings illustrated that young children with visual impairments need to be taught how to play with others.

Eventually, the child in the BEGIN-OUT program is placed in a nursery, childcare center, or preschool. The child's aide joins him in this new setting so as to assist in the transition from one environment to other. Once the child is comfortable in the preschool, the third phase–Agency Support Program–begins. Program suggestions are made to the preschool and in-services are provided to assist the preschool personnel. Finally, the Consultation Support Program is a service that is offered to parents whose children are integrated in an age-appropriate preschool. In effect, the agency, at this stage, acts as an advocate for the parents to ensure that the child is developing at a reasonable pace.

BEGIN provides a service that is currently in demand: a structured early intervention program for preschoolers with visual impairments. Empowering parents to use "normal" activities in special ways with their children provides the child with experiences they may not have had prior to the intervention. The intervention grows with the child. As the child moves from the home to the preschool, so too, do the services. Once the services are no longer needed on a daily or weekly basis, the intervention takes on a more supportive role. Consequently, the socialization and development of a young child who is visually impaired is fostered through the BEGIN program.

Compensating for the child's visual loss must start in the home and continue in the preschool. Structured environments and curricula are essential to the development of early

childhood social skills. Addressing the needs of the preschool child will help prepare the child for successful inclusion as well as enhance the child's self-esteem (Tuttle, 1984). Greatest support for early intervention programs comes from PL 99-457 wherein individualized family service plans (IFSP) are legislated by federal law (Fewell & Vadasy, 1986). PL 99-457 acknowledges that families must be more than passive participants in the development of their child's educational plans: the home and school must work together to meet the specific needs of a young child with a visual impairment.

Conclusion

Children with visual impairments develop differently than children without visual impairments. Their passage through the various stages of development is usually delayed. The development of socialization skills may also be delayed if the early experiences of the child are not enhanced somehow or mediated through the environment. Vision allows children to practice their skills with others, refining and developing them as required. For the child who is visually impaired, interacting with peers becomes a challenging task. As a result, rejection and social isolation from peers in the mainstream may result.

Research on mother-infant interactions suggest that early communication and socialization skills can be fostered if the mother's attitude is one of acceptance. Parents need to be taught how to interact with their child, how to identify their needs, and how to encourage interaction with siblings (if any). As a matter of fact, very little has been written on the social interaction between a young child with a visual impairment and his sibling(s). Research in this area could provide very interesting information with implications that could be relevant to successful interactions within the preschool.

Encouraging appropriate play skills is extremely important to the early acquisition of social skills. Since much of a child's time is spent playing, play is the primary focus of early intervention. It is a natural environment in which socialization skills can be honed. Simply gaining access to peer groups is insufficient, though. The child who is visually impaired must

develop the play skills in order to maintain the interaction. The development of play skills in the young child who is visually impaired, however, is one area that is in need of further research.

Additional areas in need of research include discovering ways to reduce the amount of adult intervention in play activities, to increase the amount of peer involvement in the development of play skills, outlining play behaviors that may be specific to children with visual impairments, the creation of early intervention programs within the home, and outlining cultural influences on the development of early social skills development. The majority of the research that currently exists focuses on how the play skills of a child who is blind differs from those of a child with sight; at no time, to this author's knowledge, has a study outlined play skills that are unique to the child who is blind. For example, it is unreasonable to expect that a doll be a little girl's preference as play object if she is totally blind–she may prefer playing with a feather duster because it feels good. It is becoming increasingly more evident that common household objects are more interesting play objects for children in general, and children who are blind, in particular. What the field of early childhood and visual impairments needs is a home-based curriculum that integrates the child's natural interests with appropriate play skills and non-conventional objects or toys.

Finally, assisting parents with the early development of their child is essential. Aside from developing play skills to enhance social skills, parents must also learn how to create an environment that encourages exploration and independent discovery in a safe way. To re-emphasize a statement made earlier by Piaget (1952, 1960), it is clear that exploration of the environment is the foundation of all learning.

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